

CLAIMS

What is claimed is:

1. An apparatus for detecting faulty nozzles comprising:
 - 5 a printing unit, which contains an inkjet component with a plurality of nozzles for printing a predefined test pattern consisted of a plurality of blocks, each of which corresponds to each one of the nozzle;
 - a scanning unit, which scans the predefined test pattern to generate an image thereof;
 - 10 an analyzing unit, which analyzes the image of the predefined test pattern to determine the locations of faulty nozzles and returns the result to the printing unit so that normal nozzles are used to compensate for the faulty nozzles in subsequent printing.
- 15 2. The apparatus of claim 1 further comprising a memory unit, which stores the image of the predefined test pattern scanned by the scanning unit and sends the image to the analyzing unit for the analyzing unit to determine which nozzle is faulty.
3. The apparatus of claim 1, wherein the scanning unit is an optical scanner.
4. The apparatus of claim 1, wherein the analyzing unit contains a microprocessor.
- 20 5. The apparatus of claim 1, wherein the analyzing unit establishes a mask containing all of the faulty nozzles and returns the mask to the printing unit so that normal nozzles are used to compensate for the faulty nozzles in subsequent printing.
6. A method for detecting faulty nozzles used in a scanning unit and a connected printing unit with an inkjet component with more than one nozzle, the method comprising the steps of:

printing a predefined test pattern corresponding to the nozzles on the inkjet component;

sending the predefined test pattern to the scanning unit;

scanning the predefined test pattern to generate an image thereof;

5 analyzing the image of the predefined test pattern; and

returning the analysis result to the printing unit so that the normal nozzles are used to compensate for the faulty nozzles in subsequent printing.

7. The method of claim 6, wherein the step of printing a predefined test pattern corresponding to the nozzles on the inkjet component prints the predefined test pattern
10 using the printing unit.

8. The method of claim 6, wherein the step of scanning the predefined test pattern to generate an image thereof scans the predefined test pattern using the scanning unit.

9. The method of claim 6, wherein the step of scanning the predefined test pattern to generate an image thereof is followed by the step of storing the image of the predefined test
15 pattern.

10. The method of claim 6, wherein the step of analyzing the predefined test pattern determines the faulty nozzles from the blank blocks in the predefined test pattern.